

**PATENT COOPERATION TREATY**  
**PCT**  
**Report PCT/ISA/03 27 DEC 2004**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT** PCT  
(PCT Article 36 and Rule 70)

REC'D 01 DEC 2004

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| Applicant's or agent's file reference<br>CQN 2566 WO   | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) |  |
| International application No.<br>PCT/EP 03/06578   | International filing date (day/month/year)<br>23.06.2003   | Priority date (day/month/year)<br>27.06.2002 |
| International Patent Classification (IPC) or both national classification and IPC<br>D01D10/02 |  |  |
| Applicant<br>TEIJIN TWARON B.V. et al.   |  |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of sheets.
3. This report contains indications relating to the following items:
- I  Basis of the opinion
  - II  Priority
  - III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV  Lack of unity of invention
  - V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI  Certain documents cited
  - VII  Certain defects in the international application
  - VIII  Certain observations on the international application

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|---|---|
| Date of submission of the demand<br><br>03.12.2003  | Date of completion of this report<br><br>30.11.2004                     |
| Name and mailing address of the international preliminary examining authority:<br><br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized Officer<br><br>Martinez, C<br>Telephone No. +49 89 2399-7510 |



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 03/06578

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-6                          as originally filed

**Claims, Numbers**

1-11                        as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description,      pages:
- the claims,           Nos.:
- the drawings,        sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

|                               |      |        |              |
|-------------------------------|------|--------|--------------|
| Novelty (N)                   | Yes: | Claims |              |
|                               | No:  | Claims | 1-4,6,7,9-11 |
| Inventive step (IS)           | Yes: | Claims |              |
|                               | No:  | Claims | 1-11         |
| Industrial applicability (IA) | Yes: | Claims | 1-11         |
|                               | No:  | Claims |              |

**2. Citations and explanations**

**see separate sheet**

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Reference is made to the following documents:

- D1: Wo-A-9425506, family member of EP-0696297 cited in the application on page 2, line 3  
D2: EP-A-0384425

**Re Item V**

**Lack of novelty**

The present application does not meet the requirements of Article 33(2) PCT because the subject-matter of the following claims does not appear to be new.

**Claim 1**

Document D2 discloses a post-spinning process for preparing high modulus, high tenacity para-aramid fibers wherein the fibers are washed, drawn at a first constant tension to within 40-95% of breaking load at a temperature of less than about 50 °C, for a duration of more than about 3 seconds while containing at least 15% water, and dried at a second constant tension which is from 10-100% of the first constant tension at a temperature of more than the temperature of the first draw and not greater than about 350°C (D2: p.2, I.43-48).

D2 therefore discloses a process for obtaining a synthetic organic aromatic heterocyclic rod fibre comprising spinning a synthetic organic polymer to an aromatic heterocyclic rod fibre, followed by loading the fibre in the presence of a processing aid (D2: water), at a temperature below the boiling point of the processing aid and above -50°C (D2: at a temperature less than about 50°C), at a tension of 10 to 95% of the fibre breaking strength (D2: 40-95% of breaking load), followed by performing a heating step at a tension of 10 to 95% of the fibre breaking strength (D2: 10-100% of the first constant tension).

Therefore, claim 1 lacks novelty over D2.

D1 discloses a heterocyclic aromatic rigid rod polymer obtained by either producing a film or by spinning, the extruded product being treated under tension at a temperature higher

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than 200°C. D1 does not appear to disclose that the loading is carried out in the presence of a processing aid at a temperature below the boiling point of the processing aid and above -50°C, at a tension of 10 to 95% of the fibre breaking strength (D1: see claims 1, 12 and 13).

**Claims 9 and 11**

Since the process according to claim 1 is not novel, claims 9 and 11 relating to a product obtainable by the process of claim 1 also lack novelty. Furthermore, the parameters claimed in claims 9 and 10 are also known from D2 (see D2: Table 1 + p.4, I.5 to p.5, I.2).

**Dependent claims 2 to 4, 6 and 7**

The additional features of claims 2 to 4, 6 and 7 are also known from D2 (D2: p.3, I.39 to p.4, I.1).

**Claims 5 and 8**

No positive contribution to inventive step can be seen in the additional features of claims 5 and 8 in the sense of Article 33(3) PCT. For example, PIPD is one of the synthetic organic heterocyclic polymers that the person skilled in the art could consider to carry out the process of claim 1.